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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/849,259 | 05/07/2001 | Junichi Kitano | 207682-3KK | 8582 |
| 22850 | 7590 | 02/19/2004 | EXAMINER | |
| OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314 | | | MOORE, KARLA A | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1763 | |

DATE MAILED: 02/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/849,259

Applicant(s)

KITANO ET AL.

Examiner

Karla Moore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-10 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-21 is/are allowed.
- 6) ☒ Claim(s) 11 and 14 is/are rejected.
- 7) ☒ Claim(s) 12-13 and 15-16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0203.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

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DETAILED ACTION

Election/Restrictions

1. Claims 1-10 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention—Group I, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in a paper filed 10 October 2003.
2. Applicant's election with traverse of Group II in a paper filed 10 October 2003 is acknowledged. The traversal is on the ground(s) that the distinct groups appear to have an overlapping search area. This is not found persuasive because the non-elected method claims contain ordered steps to be used in one of many intended methods that can be used with the apparatus. These limitations are not part of the search for the elected apparatus claims.

The requirement is still deemed proper and is therefore made FINAL.

Specification

3. The abstract of the disclosure is objected to because it is too long. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of

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each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent No. 09-260075 to Yaegashi et al. in view of U.S. Patent No 4,425,075 to Quinn and U.S. Patent No. 6,263,587 to Raajimaakers et al.

7. Yaegashi et al. discloses a coating and developing treatment system for performing a coating and developing treatment for a substrate in Figure 1 and the accompanying translated text, the apparatus comprising: a processing zone (multiple part numbers, 11-15 and 21-22) having a coating treatment unit (15) for forming a coating a layer on the substrate, a developing treatment unit (22) for performing a developing treatment for the substrate, and a heat treatment unit (12 and 21) for performing a heat treatment for the substrate; an interface section (30) for carrying the substrate between said processing zone; an aligner (40); a density measuring unit (50) for measuring the density of impurities at least inside said processing zone or said interface section. Subsequent decontamination processing is carried out based on the density of impurities found (abstract).

8. However, Yaegashi et al. fail to teach the aligner of the apparatus not included in the system for performing an exposure processing OR reduced-pressure impurity removing unit having a chamber which can be closed airtightly for reducing the pressure inside the chamber to a predetermined pressure before the substrate undergoes the exposure processing to remove the impurities adhering to the coating layer on the substrate inside the chamber for a predetermined time with an accompanying reduced pressure control unit for controlling at least the predetermined pressure of predetermined time based on the value measured by said density measuring unit.

9. Quinn teaches the use of an aligning structure separate from an processing apparatus for the purpose of performing a critical prealigning of a wafer with respect to a standard prior to transfer to a processing apparatus such as an exposure apparatus (abstract and column 1, rows 18-21).

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10. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an aligning device separate from a processing apparatus, for instance an exposure apparatus, in Yaegashi et al. in order to perform a critical prealignment of a wafer with respect to a standard prior to transfer to a processing apparatus as taught by Quinn.

11. Raaijmakers et al. teach the use of a reduced-pressure impurity removing unit having a vacuum chamber for the purpose of desorbing and sweeping away contaminants, which lessens the occurrence of contamination and stress induced failures and increases product yields (column 2, rows 61-67 and column 3, rows 53-58 and column 4, rows 22-24). Raaijmakers teaches performing the reduced-pressure impurity removing/de-gassing in the vacuum chamber for a time adequate to degass the wafer (a predetermined time); the process is controlled using a reduced pressure control unit (35; column 4, row 67 through column 5, row 4 and column 6, rows 55-65). The apparatus of Raaijmakers et al. is used between processing steps (column 1, rows 25-31).

12. It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided an airtight, reduced-pressure impurity removing unit in Yaegashi et al. in order to desorb and sweep away contaminants, lessening the occurrence of contamination and stress induced failures and increasing product yields as taught by Raaijmakers et al.

13. With respect to claim 14, the "casing" referred to has been interpreted as the chamber walls that enclose the apparatus of Yaegashi et al.

Allowable Subject Matter

14. Claims 17-21 are allowed.

15. The following is an examiner's statement of reasons for allowance: The prior art fails to teach or fairly suggest a coating and developing treatment system for performing a coating and developing treatment for a substrate, comprising: a processing zone having a coating treatment unit for forming a coating a layer on the substrate, a developing treatment unit for performing a developing treatment for the substrate, and a heat treatment unit for performing a heat treatment for the substrate; an interface section

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for carrying the substrate between said processing zone and an aligner not included in the system for performing an exposure processing for the substrate; a density measuring unit for measuring the density of impurities at least inside said processing zone or said interface section; a reduced-pressure impurity removing unit having a chamber which can be closed airtightly for reducing the pressure inside the chamber to a predetermined pressure before the substrate undergoes the exposure processing to remove the impurities adhering to the coating layer on the substrate inside the chamber for a predetermined time; and a reduced pressure control unit for controlling pressure-reducing speed of the reduced-pressure impurity removing unit based on the value measured by said density measuring unit.

16. The closest piece of prior art is Japanese Patent No. 09-260275 to Yaegashi et al. Yaegashi et al. fail to disclose the above underlined limitation. Further, no other prior art reference was located which taught or fairly suggested the limitation and provided the requisite motivation for combination.

17. Claims 12-13 and 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. With respect to claims 12 and 15, the prior art is discussed above. The prior art fails to fairly teach or suggest a controller for classifying the density of the impurities into predetermined density ranges, storing the predetermined pressure and the predetermined time corresponding to the respective density ranges, and controlling said reduced-pressure control unit to adjust the predetermined pressure and the predetermined time equal to the stored predetermined pressure and predetermined time corresponding to the predetermined density range to which the measured value belongs. Further, no other prior art reference was located which taught or fairly suggested the limitation and provided the requisite motivation for combination.

19. With respect to claims 13 and 16, the prior art is discussed above. The prior art fails to fairly teach or suggest said reduced-pressure control unit also controls pressure reducing speed at the time of reducing the pressure of the chamber to the predetermined pressure, also based on the value measured

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by said density measuring unit. Further, no other prior art reference was located which taught or fairly suggested the limitation and provided the requisite motivation for combination.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karla Moore whose telephone number is 571.272.1440. The examiner can normally be reached on Monday-Friday, 8:30am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 571.272.1439. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

km
10 February 2004

P. Hassanzadeh
Parviz Hassanzadeh
Primary Examiner
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